

IN THE CLAIMS:

Claims 117, 121, 126, 129 and 133 have been amended for the sole purpose of facilitating prompt issuance of the remaining claims. Claims 122, 123, 128, and 132 have been cancelled without prejudice or disclaimer. New claims 134, 135, and 136 have been added. All pending claims, whether amended or not, are included below. A version showing all pending claims, whether amended or not, and all respective markings to show changes in the claims is included at the end of this Amendment.

117. (Currently Amended) A device comprising:

at least one vertically oriented carbon nanotube embedded in a silicon-based substrate without protruding beyond the said substrate in air.

118. (Previously Presented) A device of claim 117, wherein the said substrate material comprises a member of the class consisting of undoped silicon, doped silicon, crystalline silicon, polysilicon, silicon nitride, undoped silicon dioxide, and doped silicon dioxide.

119. (Previously Presented) A device of claim 117, wherein the said carbon nanotube is fabricated directly within a template in the said substrate.

120. (Previously Presented) A device of claim 117, wherein said vertically oriented carbon nanotube is at least partially electrically isolated from the said substrate.

121. (Currently Amended) A device comprising:

at least one vertically oriented carbon nanotube; ~~and~~

at least one horizontal conductive layer, wherein the said horizontal conductive layer is electrically coupled to said vertically oriented carbon nanotube; and

wherein the said horizontal conductive layer includes patterned lines.

122. (Cancelled) A device of claim 121, wherein the said horizontal conductive layer includes patterned lines.

123. (Cancelled) A device of claim 121, wherein the said horizontal conductive layer includes a blanket deposited film.

124. (Previously Presented) A device of claim 121, wherein said carbon nanotube is conductive.

125. (Previously Presented) A device of claim 121, wherein said horizontal conductive layer material comprises a member of the class consisting of aluminum, copper, tungsten, titanium, nickel, chromium, and their alloys.

126. (Currently Amended) A device comprising:

at least one vertically aligned carbon nanotube, wherein said vertically aligned carbon nanotube is fabricated within vertically aligned holes within a substrate material; ~~and~~

at least one horizontal conducting interconnect, wherein said interconnect is electrically coupled to said vertically aligned carbon nanotube; and

wherein a plurality of said vertically aligned carbon nanotubes form a pattern in the said substrate material.

127. (Previously Presented) A device of claim 126, wherein said substrate material comprises a member of the class consisting of silicon, silicon nitride, silicon dioxide, aluminum, alumina, and gallium arsenide.

128. (Cancelled) A device of claim 126, wherein a plurality of said vertically aligned carbon nanotubes form a pattern in the said substrate material.

129. (Currently Amended) A device comprising:

a first electronic device having at least one logic device;

a second electronic device having at least one logic device; and

at least one carbon nanotube, wherein the said carbon nanotube is electrically coupled to said first electronic device and said second electronic device.

130. (Previously Presented) A device of claim 129, wherein said carbon nanotube is a vertically oriented carbon nanotube.

131. (Previously Presented) A device of claim 129, wherein said carbon nanotube is a horizontally oriented carbon nanotube.

132. (Cancelled) A device comprising:
at least one vertically oriented carbon nanotube; and
at least one horizontally oriented carbon nanotube, wherein the said horizontally oriented carbon nanotube is electrically coupled to the said vertically oriented carbon nanotube.

133. (Currently Amended) A device having plurality of carbon nanotubes in a substrate comprising:

a first carbon nanotube;
a second carbon nanotube; and
wherein said first carbon nanotube crosses path with said second carbon nanotube at a point such that said first carbon nanotube and said second carbon nanotube are electrically coupled.

134. (New) A device comprising:
at least one vertically oriented carbon nanotube embedded in a substrate, wherein the said nanotube is protruding from the said substrate;
at least one horizontal conductive layer, wherein the said horizontal conductive layer is electrically coupled to said vertically oriented carbon nanotube;
and
wherein the said horizontal conductive layer includes patterned lines.

135. (New) A device comprising:
at least one vertically oriented carbon nanotube, wherein said carbon nanotube is conductive; and
at least one horizontal conductive layer, wherein the said horizontal conductive layer is electrically coupled to said vertically oriented carbon nanotube.

136. (New) A device of claim 135, wherein the said horizontal conductive layer includes a blanket deposited film.